UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Amini, J. *Art Unit:* 2672

In re:

Applicant: GEISLER, T.

Serial No.: 09/673,313

Filed: November 24, 2000

BRIEF ON APPEAL

October 29, 2007

Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia

Sir:

This is a Brief on Appeal from the final rejection of claims 1-13 by the Primary Examiner.

1. Real Party of Interest

The real party of interest in this application is Robert Bosch GmbH, Postfach 30 02 20, D-70442 Stuttgart, Germany.

2. Related Appeals and Interferences

No other related appeals or interferences known to appellant, the appellant's legal representative or assignee which will directly affect or will be directly affected by or have a bearing on the Board's decision in the pending appeal have been filed.

3. Status of Claims

The present application contains claims 1-13.

All claims are rejected by the Examiner.

4. Status of Amendments

In this application a Final Office Action was issued on November 19, 2003. The appellant did not file any Amendments after the Final Office Action.

5. Summary of the Claimed Subject Matter

The present invention relates to a method for representing moving objects in bit-mapped format on a matrix- like display device. One embodiment of the method according to the invention for representing objects in bit-mapped format on a matrix- like display device is illustrated in Figs. 1a-1c, in terms of its use for representing a pointer on a dashboard display device, or dashboard monitor, on board a motor vehicle.

First, a calculation of a plurality of bit maps for a certain number of different pointer representations along a predetermined path curve, namely along a circular scale, for instance, as a background is done offline. Already in these advance calculations of the plurality of bit maps, a filtration is performed for the sake of edge smoothing in the local region, so as to make the later online calculations as slight as possible and thus make the display speed as fast as possible. The spatial difference between adjacent pointer representations along the path curve, which are precalculated and pre-stored as a respective bit map, is substantially smaller than the applicable pointer representations. The precise difference must be optimized from one case to another to suit the various pointer representations. The calculated plurality of bit maps is stored in memory in advance in a memory device that is part of the dashboard monitor. In general, a compromise must be made between the available memory space

and the desired fine resolution. In online operation, during motor vehicle travel, the execution of a representation processing is then done, with a display sequence of pointer representations along the path curve, by reading and displaying suitably stored bit maps. If the pointer is the speedometer pointer, it is accordingly the pointer bit map corresponding to the instantaneous speed that is read and displayed at a given time. The corresponding scale, which is an associated precalculated and pre-stored background image, has the pointer representation superimposed on it.

In Fig. 1a a bit map B(i) for representing the pointer in bit-mapped format on the matrixlike display device of the dashboard instrument is shown at an i^{th} point of the path curve, specifically to indicate 120 km/h. In Fig. 1b, a bit map B(i + 1) for representing the pointer in bit-mapped format on the matrixlike display device of the dashboard instrument is shown at an adjacent $(i + 1)^{th}$ point of the path curve, specifically to indicate 125 km/h. A bit map for representing a pointer in bit-mapped format on the matrixlike display device of the dashboard instrument at an intervening point of the path curve, specifically to indicate 122.5 km/h, is not stored in memory. In this embodiment, a display of such a pointer representation located between two pointer representations each with a precalculated and pre-stored bit map, is done by means of a paired interpolation between the corresponding pixel

values. The pixel values are present separately in accordance with certain colors, preferably the three fundamental colors of red, green and blue, and preferably the interpolation is performed separately for each color. In this example, however, for the sake of simplicity let it be assumed that the pointer representation is done in only one fundamental color each, or that the values for all three fundamental colors are the same. The resultant 256 values are located between 0 and 255. 0 designates the darkest value and 255 the brightest value. It should also be noted that for the sake of simplicity, not all the pixel values are shown in the bit maps of Figs. 1a-1c.

Fig. 1b is an intermediate bit map Z(i, a) interpolated linearly in online operation, for representing the pointer in bit-mapped format on the matrixlike display device of the dashboard instrument at an $(i + a)^{th}$ point of the path curve; in this case, a = 0.5, because 122.5 km/h is located precisely in the middle between 120 km/h and 125 km/h. The pixel values $Z_{mn}(i, a)$ of the intermediate bit map Z(i, a) can accordingly be calculated as followed:

$$Z_{mn}(i, a) = (1 - a) * B_{mn}(i) + a * B_{mn}(i + 1) \quad (1)$$

where m is the line indicator and n is the column indicator. In other words, the pixel values $Z_{mn}(i, a)$ are precisely the mean values of the pixel values $B_{mn}(i)$ and $B_{mn}(i + 1)$.

Claim 1, the broadest claim on file, specifically defines a method for representing an object in bit-map format on a matrixlike display device which includes several steps.

First the step of calculating a plurality of bit maps for a certain number of various object representations along a predetermined path curve in advance is performed. This is disclosed in lines 12-20 on page 6 of the specification.

The plurality of bit maps is stored in the memory in advance, as disclosed in lines 21-27 on page 6 of the specification and in the paragraph bridging pages 6 and 7.

Then the method includes the step of executing a represention processing with a display sequence of object representations along the path curve by reading and displaying correspondingly memorized bit maps, wherein the object moves along the path curve during the representation

processing and displaying of the correspondingly memorized bit maps, as explained in lines 4-14 on page 7.

The above mentioned features are also explained in detail in lines 15-30 on page 7 and in lines 1-30 on page 8, and in the paragraph bridging pages 8 and 9. They are also shown in Figures 1a and 1b.

6. Grounds of Rejection to be Reviewed on Appeal

In the Final Office Action the Examiner rejected claims 1-6, 8, 9, 11 and 12 under 35 U.S.C. 103(a) over the patent to Van de Lavoir.

Thus, the first ground on appeal is whether these claims are patentable over this patent in the sense of 35 U.S.C. 103(a).

Claims 7, 10 and 13 are rejected under 35 U.S.C. 103(a) over the patent to Van de Lavoir in view of the patent to Iwamoto.

The second ground on appeal is whether claims 7, 10 and 13 can be considered as patentable in view of the obviousness rejection over these patents by the Examiner based on 35 U.S.C. 103(a).

Finally, claims 1 and 2 are rejected by the Examiner under 35 U.S.C. 112, second paragraph as being indefinite. Therefore, the third ground on appeal is whether claims 1 and 2 are definite or not, in the sense of 35 U.S.C. 112.

7. Arguments

Arguments related to first ground on appeal, namely whether claims 1-6, 8, 9, 11 and 12 are rejectable under 35 U.S.C. 103(a) over the patent to Van de Lavoir.

Claim 1, the broadest claim on file, defines a method for representing objects in bit-mapped format on a matrixlike display device, in which a plurality of bit maps for a certain number of various objects representations around a predetermined path curve are calculated in advance, the plurality of bit maps are stored in memory in advance, and a representative processing with a display sequence of object representations along the path curve is executed by reading and displaying correspondingly memorized bit maps, wherein an object moves along the path curve during the representation processing and displaying of the correspondingly memorized bit maps.

In paragraph 3 on page 3 of the last Office Action the Examiner cited column 37, lines 23-38 of the Van de Lavoir patent and indicated that the references teaches the concept of the claimed language, in particular that a calculation is performed between two stored graphics. It is respectfully submitted that neither in this portion nor in other portions of the patent to Van de Lavoir there is no disclosure that the graphic objects can be stored. Moreover, it should be emphasized that the connecting lines between the items shown in the display are represented with a stored ink. This portion of the reference deals not with the object, but instead with the represented lines. There is no storage of the image representation of the lines, but instead an ink for the image representation is stored.

It is believed to be clear that the patent to Van de Lavoir does not teach this new features of the present invention which is defined in claim 1, in addition to other features defined in claim 1.

The Examiner indicated that it would be obvious to arrive at the present invention from this reference. However, the reference does not disclose the above specified new features of the present invention.

In order to arrive at the applicant's invention from the teaching of the reference, the reference has to be fundamentally modified by including into it the feature which was first proposed by the appellant. However, it is known that in order to arrive at a claimed invention, by modifying the references the cited art must itself contain a suggestion for such a modification.

This principle has also been consistently upheld by the U.S. Court of Customs and Patent Appeals which, for example, held in its decision in re Randol and Redford (165 USPQ 586) that

> Prior patents are references only for what they clearly disclose or suggestion; it is not a proper use of a patent as a reference to modify its structure to one which prior art references do not suggest.

Definitely, the reference does not provide any hint or suggestion for such modifications.

It is believed as for the first ground on appeal, claim 1 should be considered as patentably distinguishing over the art and should be allowed.

As for claims 2-6, 8, 9, 11 and 12, these claims depend on claim 1, they share its allowable features, and therefore they should be allowed as well.

Arguments related to second ground on appeal, namely whether claims 7, 10 and 13 are rejectable under 35 USC 103(a) over the patent to Van de Lavoir in view of the patent to Iwamoto.

Turning now to the patent to Iwamoto, it should be emphasized that this reference does not disclose any pointer indicator which is movable along a scale. The indicator shown in Figure 14 represents fluctuations of the injection molding machine in operation as disclosed in this reference. A speed is not displayed, as explained in column 9, lines 7-15. Also, the patent to Iwamoto does not provide any hint or suggestion for a pointer recognizable over a scale. In contrast, the method of the present invention includes the movement of the object formed as a pointer along a scale, so that in different positions of the pointer graphic representations are calculated and stored.

In the Examiner's opinion Figure 13 of the patent to Van de Lavoir shows a similar pointer. In accordance with the present invention a pointer is always the same object which is movable along a scale to identify a

corresponding value. In contrast, in Figure 13 of the reference an immovable object (a diagram) changes to illustrate a value. This reference does not disclose either an object which moves or a pointer with a scale.

The Examiner rejected claim 13 over the combination of the teaching of the patents to Van de Lavoir and Iwamoto. None of these references teaches the new features of the present invention which are now defined in claim 13, and therefore any combination of the references would lead only to such a method which is not be identical or similar to the present invention.

Therefore, claim 13 should also be considered as patentably distinguishing over the art and should also be allowed. It is believed that the second ground on appeal, in particular the patentability of claim 13 over the combination of the references under 35 U.S.C. 103(a) should be considered in the sense of reversal of the Examiner's rejection and allowance of claim 13 together with claims 7 and 10.

Arguments related to third ground on appeal, namely the rejection of claims 1 and 10 under 35 U.S.C. 112 as being indefinite.

As for the Examiner's rejection of the claim under 35 U.S.C. 112, it is respectfully submitted that the calculation of a bit map, which the Examiner required to present in detail would unjustifiably limit the present invention. The calculation of a bitmap is not such a feature for an image which must be directly defined in a claim. The specification however clearly discloses this feature in detail.

It is therefore believed that no changes are needed in claims 1 and 2 to make them definite in the sense of 35 U.S.C. 112. This is how in the appellant's opinion the third issue under appeal should be decided.

In view of the above presented remarks and amendments, it is requested to reverse the Examiner's rejection of the claims and to allow the present application.

Respectfully submitted,

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CLAIMS APPENDIX

1. A method for representing an object in bit-mapped format on a matrixlike display device, having the following steps:

calculating a plurality of bit maps for a certain number of various object representations along a predetermined path curve in advance;

storing the plurality of bit maps in memory in advance; and

executing a representation processing with a display sequence of object representations along the path curve by reading and displaying correspondingly memorized bit maps, wherein the object moves along the path curve during the representation processing and displaying of the correspondingly memorized bit maps.

2. The method of claim 1, characterized in that the calculating of the plurality of bit maps in advance, a filtration is performed for the sake of edge smoothing in the local region.

3. The method of claim 1, characterized in that an associated precalculated and pre-stored background image has the various object representations superimposed on it.

4. The method of claim 1, characterized in that the spatial difference between adjacent object representations along the path curve, which are precalculated and pre-stored as a respective bit map, is substantially smaller than the applicable object representations.

5. The method of claim 1, characterized in that for displaying object representations, which are located between two object representations having a respective precalculated and pre-stored bit map, a paired interpolation between the corresponding pixel values is performed.

6. The method of claim 5, characterized in that the pixel values are present separately in accordance with certain colors, preferably the three fundamental colors of red, green, blue, and the interpolation is performed separately for each color.

7. The method of claim 6, characterized in that for the interpolation, the mean value for each pixel, weighted in accordance with the intermediate position, is calculated.

8. The method of claim 1, characterized in that a compression of the pre-stored bit map data is performed.

9. The method of claim 1, characterized in that the method is employed on a dashboard display device, located on board a motor vehicle, for representing a pointer.

10. The method of claim 9, wherein the pointer is a speedometer pointer, and wherein a pointer bitmap corresponding to a speed is read and displayed at a given time.

11. The method of claim 9 or 10, wherein an associated pre-calculated and pre-stored background image is a corresponding speed scale.

12. The method of claim 1, wherein the various object representations are object representations of the same object.

13. The method of claim 1, wherein the object is a pointer and wherein the pointer moves along a scale, wherein in different position of the pointer, graphical representations are calculated and stored in advance.

RELATED PROCEEDINGS APPENDIX

None

EVIDENCE APPENDIX

None